THE ATTITUDES OF DENTISTS IN INDIANA TOWARD THE TREATMENT OF PATIENTS WITH CEREBRAL PALSY

by

Thomas J. Wickliffe

Submitted to the Faculty of the Graduate School
in partial fulfillment of the requirements for
the degree of Master of Science in Dentistry,
Indiana University School of Dentistry, 1977.

ACKNOWLEDGMENTS

The author wishes to thank United Cerebral Palsy Foundation of New York for the grant which has enabled him to continue his graduate dental education and to gain many valuable experiences in working with children with cerebral palsy. It is to these children that this study is dedicated.

Sincere appreciation is extended to Dr. James R. Roche for his patient guidence during this investigation and throughout the two years of graduate study. He has served as an inspiration to this author as a teacher, pedodontist, and friend.

A special debt of gratitude is due to the pedodontic graduate faculty at Indiana University School of Dentistry and the staff of James Whitcomb Riley Dental Clinic for making my graduate education rewarding and enjoyable.

A note of thanks goes to Dr. Leonard Koerber for his friendship and help in the analysis of the data.

The author wishes to thank Professor Paul Barton for his friendship and talent in editing this manuscript and to Mrs. Vivian Haggard for her meticulous typing of it.

I would like to express appreciation to my classmates in the graduate program: Dr. Peter Claussen, Dr. George Krull, Dr. Douglas Schmidt, and Dr. John Walsh. Their friendship will be treasured always.

Thanks are extended to Professor Paul Barton, Dr. Charles Gish, Dr. Leonard Koerber, Dr. James Roche and Dr. Paul Starkey for their participation on my graduate committee.

To my wife, Sidney, and our son, Nathan, goes my deepest gratitude for their love, support, and patience throughout the past two years.

TABLE OF CONTENTS

TABLE OF CONTENTS

LIST OF TABLES

INTRODUCTION

During the past twenty years, the importance of making dental treatment available for persons with cerebral palsy and other handicapping conditions has been increasingly recognized. Advances in medical technology have improved birth survival rates and provided for a longer lifespan, which further emphasizes the need of restorative dental procedures.

One of the first attempts to point out the need for dental treatment and to stimulate increased participation by dentists in providing this treatment for persons with cerebral palsy was in a report on the dental phase of the First National Conference on Cerebral Palsy in 1949.[1]

Several scientific investigations have provided documentation concerning the dental needs of handicapped persons. Snyder, Knopp and Jordan[2] in 1960 reported on a study of the dental problems of non-institutionalized mentally retarded children, including some cerebral palsied children. They found that only three percent of the decayed primary teeth of five to nine year old children had been restored, compared to over forty percent for normal children. Percentages were higher for missing teeth in all age ranges.

During a three-year program in Idaho, Young and Shannon[3] studied the feasibility of operating a dental treatment center for handicapped children. A total of 259 handicapped children aged three to nineteen were treated in the study. The authors found greater initial treat-

ment needs in these handicapped children than in non-handicapped (which they attributed to neglect). They also concluded that most of these handicapped children could be treated in private offices. Similar findings have been reported by other authors.[4-6]

In 1965 Horowitz and co-workers[7] studied the provision of dental care for handicapped children in Illinois. They found that children with cerebral palsy had an average of 12.6 restorations or extractions to be completed per child, and this was the highest figure for all handicapping conditions studied. The authors concluded that handicapped children can receive comprehensive dental care in a private office.

O'Leary[8] stated that the dental needs of cerebral palsied patients have suffered greater neglect than any other people within the handicapped group.

In reporting the dental needs of the mentally retarded and other chronically ill persons, Miller[9] stated that routine dental care is not available for most of these people. He listed the following as some possible reasons for this lack of availability.

1. These special patients tend to upset the rigid schedule of most dentists. It is difficult to receive the appropriate fee for the additional time and effort required to treat these children.

2. Most offices are not equipped with the techniques and devices required for the special problems in management of these patients.

3. Adequate training usually has not been provided in dental school for the treatment of special patients.

4. More studies are needed concerning the dental needs of these children.

5. Dentists are often not included in planning for programs supervising the health of retarded children.

6. Parents of special children are often apathetic about the dental needs of their children in view of other competing needs. Parents are also afraid that their child's behavior will create a scene in the dental office.

McCracken,[10] in a survey of parents of special children concerning their attitude toward dental care, found a situation similar to that described by Miller.[9] The overriding fear within this group of mothers was that the child wouldn't be accepted in the dental situation. The mothers wanted their child to be treated the same as normal children and they feared conflicts with the dentist and other patients.

Kenny and Mckim[11] surveyed the parents of 226 non-institutionalized cerebral palsied and mongoloid children concerning their attitudes toward dental care. Attitudes toward dental care in this group varied according to the education level and socio-economic status of the parents. The factors influencing parental attitudes were similar to those in parents of non-affected children. The authors found a strongly positive attitude toward dental care. They concluded that this favorable attitude toward dental care for their children resulted from the parents' feeling that their child could not express pain and that the child should therefore not have to endure it. The authors also reported a belief amoung parents that dental care was not always available for their child. Only 44 percent of the children with cerebral palsy were treated by their family dentist.

In addition to the above mentioned problems which interfere with dental treatment, Bramer[12] stated that the handicapped were not receiving the same medical and dental privileges as others, because of architectural and structural barriers which confront them in medical and dental clinics. As a result, a large number of the handicapped are unable to realize the full value of dental services.

Many people believe that the major factor influencing whether or not handicapped patients receive adequate dental care, is the attitude of the private practitioners toward handicapped persons. The purpose of this investigation was to determine the attitudes of Indiana dentists toward patients with cerebral palsy and to determine how these attitudes affect the treatment of these patients. It is hoped that the results of this study can be used to increase the availability of dental care to persons with cerebral palsy.

REVIEW OF LITERATURE

CEREBRAL PALSY

Definition

Cerebral palsy was first described by William Little in 1862.[13] He noted that the disease often followed difficult labor and he termed the characteristic posture that resulted "spastic rigidity." Although we now know that Little described only one of the many conditions of cerebral palsy, the clinical entity is still sometimes referred to as Little's disease.

Perlstein[14] defined cerebral palsy as a condition characterized by paralysis, paresis, incoordination, dyskinesis, or any aberration of the motor function due to the involvement of the motor centers of the brain.

The definition proposed by Denhoff and Robinault[15] stated that cerebral palsy is one of a group of childhood neurologic disorders which reflect cerebral dysfunction rather than damage per se.

Still another viewpoint on the meaning of cerebral palsy was reported by Bax.[16] A group of experts concluded that cerebral palsy is a disorder of movement and posture resulting from a permanent nonprogressive defect or lesion of the immature brain.

Cerebral palsy therefore is not a specific disease in itself but rather a description of clinical symptoms. This concept is reinforced by Kauffmann,[17] who emphasized that cerebral palsy should be considered as a syndrome with consistently occurring features rather than as a distinct pathological entity.

Denhoff and Robinault[15] attributed cerebral palsy to many causative factors and they listed the following among the possibilities: cerebral maldevelopment; infection; injury; anoxia before, during, or shortly after birth; delayed maturation; or even emotional stress.

The incidence of cerebral palsy is rather uncertain because of a scarcity of accurate information concerning this affliction. According to Bowley and Garner,[18] a range of one to six children per thousand live births are afflicted with cerebral palsy.

Perlstein[14] reported the incidence of cerebral palsy in the United States to be approximately 7.5 per thousand live births. From these incidence data, he calculated the prevalence to be 480 per one hundred thousand population of all ages.

Classification

In 1956 the American Academy for Cerebral Palsy classified cerebral palsy on the basis of the following: physiology, topography, etiology, neuroanatomy, functional capacity, and therapeutics. While all of these means of classification have been proposed, only the first two mentioned have remained as the most popular and practical means of classification.

Bowley and Garner[18] listed four main types of cerebral palsy on the basis of physiology. This basis of classification refers to the physical symptoms the body exhibits as a result of the brain damage. Approximately 60 percent of cerebral palsied persons are classified as spastic. Their posture is characterized by marked rigidity of movement and inability to relax their muscles. Athetosis, characterized

by involuntary, smooth writhing, wormlike movements, affects approximately 20 percent of the patients with cerebral palsy. In ataxia, one of the less common types that make up seven percent of the total, the person shows poor body balance, an unsteady gait, and difficulties in hand and eye coordination. The fourth physiological classification is termed "mixed." Persons in this category show a combination of the features seen in the above three groups.

Classification on the basis of topography indicates which areas of the body are affected by the insult to the brain.

Monoplegia---involves one limb.

Paraplegia---involves legs only (usually seen in the spastic type).

Hemiplegia---one side of the body is affected (usually spastic).

Triplegia---three extremities are involved, usually both legs and one arm.

Quadriplegia---involves all four extremities.

Diplegia---legs are primarily affected and the arms slightly (usually spastic).

Double Hemiplegia---arms are more involved than legs.

The above two methods of classification indicate "what and where"; however, one of the most critical questions for the dental practitioner is "how much." As pointed out by Bowley and Garner,[18] patients with cerebral palsy are approximately evenly divided according to the severity of their affliction.

Persons who are ambulatory and appear rather normal are termed mild.

Persons who have some difficulty walking and talking are classified as moderate.

A severely handicapped child is one who has very limited control over his arms and legs and he may be confined to bed.

Associated Medical Problems

A number of authors have discussed some of the medical problems frequently accompanying cerebral palsy.[15,18-21] The problems commonly seen are usually also the result of trauma to the brain. Approximately 50 percent of cerebral palsied persons have some degree of mental retardation and 25 percent of these are severely subnormal. Generally, but not always, children with the greatest motor impairment have the lowest intelligence. Many of the remaining patients in this group with normal or superior intelligence have perception problems which make learning difficult. Spastic patients seem to have a greater incidence of mental retardation than the other groups.[18]

Approximately 30 percent of persons with cerebral palsy have epilepsy and therefore are taking anticonvulsant drugs.

A large percentage of cerebral palsied persons suffer from visual defects, many of them comparatively minor and capable of being treated early. Partial hearing loss is also common in these patients, with the athetoid group most frequently affected. Because of problems with muscular control and perception, speech defects are often seen.

Oral Findings

In a recent review of controlled surveys of dental disease in handicapped persons, Brown and Schodel[22] noted a scarcity of information and contradictory results. They concluded that a need exists for

large scale, definitive, standardized, epidemiologic investigations of dental disease in most of the handicapped groups, including cerebral palsy.

The present author noted similarly contradictory results in the literature concerning the oral health of cerebral palsied persons.

The incidence of dental caries, as noted by Album and associates,[23] was twice as high as in non-affected children. In a study of 76 cerebral palsied children in Sweden, Magnusson and DeVal[24] found a higher caries incidence among the affected group than the non-cerebral palsied control group. Several other investigators have reported few significant differences in caries prevalence in children with cerebral palsy and normal controls.[5,6,25,26] It seems as though mentally retarded cerebral palsied children have a higher caries incidence than mentally normal children with cerebral palsy, as pointed out by Shamarak and Bernstein.[26] They also studied the caries-susceptibility between the different classifications of cerebral palsy and found relatively the same percentages of dental caries incidence.

In a gingivitis study, Weisman[27] examined 253 cerebral palsied patients in New York. He found that nearly 80 percent of these children had gingival inflammation. This percentage was three times greater than the amount of gingivitis found in the normal control group. Other investigators have reported similar amounts of gingivitis in cerebral palsied children.[6,24,28] Swallow,[5] however, in a study of 298 educable cerebral palsied children found little difference between this group and a similar group of controls. Weisman[27] attributed the increased amounts of gingivitis to poor oral hygiene in the cerebral palsied children.

In his thesis research, Herman[29] reported six times greater amounts of enamel hypoplasia in the cerebral palsied group. These increases were also found by Siegel[25] and Via and Churchill.[30] Magnusson and Deval,[24] however, did not find that cerebral palsied children had a greater number of mineralization disorders.

Several investigators[24,25,31] are in general agreement that bruxism and attrition are evident with much greater frequency in patients with cerebral palsy than in normal patients, because of the increased muscular tension.

Album and co-workers[23] described a characteristic type of malocclusion found in cerebral palsied children which includes an open-bite, crowding of teeth, and midfacial protrusion.

Lyons[32] found that 84 percent of a group of children with cerebral palsy had malocclusion, exhibiting predominately Class II, division I occlusion and anterior openbite.

Conversely, Magnusson[33] reported that the occlusion of cerebral palsied children did not differ significantly from that of non-affected children. He did not find a tendency for special types of malocclusion in the cerebral palsied. The work of Rosenbaum and associates[34] supports these findings.

Gum[35] conducted a cephalometric survey in cerebral palsied patients. He concluded that the skeletal and dental pattern is within normal limits when compared to normal controls.

Foster, Griffiths and Gordan[36] also compared cephalometric measurements in patients with cerebral palsy to matched controls. They

found that size and form of the skull and jaws varied according to the severity of the cerebral palsy. The most severely affected persons showed significant differences and those least affected were not different from the control group.

Dummett[37] examined dental arch form and palatal vault form in 98 cerebral palsied children and 76 normal children. His results suggested that cerebral palsy has little effect on the form of the maxillary dental arch.

Siegel[25] observed that the eruption of the primary teeth was earlier in the cerebral palsied group; Swallow,[5] however, reported no difference in eruption between the group with cerebral palsy and the normal controls.

It has been postulated that pain from oral problems may be related to some of the behavioral problems seen in handicapped persons. Adelson[38] said that because of a lack of communication, the response to pain from dental caries is overt activity such as increased drooling and grinding, decreased appetite, loss of sleep and the placing of foreign objects into the mouth. Adelson,[38] in a study with 268 subjects, has shown that there is improvement in these problems after dental treatment. He concluded that dental treatment may improve significantly the overall functional ability of the handicapped.

Dentists' Attitudes

As pointed out by Miller[9] in the introduction, one of the primary reasons handicapped children are not being adequately treated concerns

the attitude of the dentist. Several studies have been conducted to determine the attitudes of practicing dentists toward persons with handicapping conditions and the extent to which this attitude interferes with the availability of dental care for this segment of the population.

In 1966 Butts[39] reported the results of an attitude survey of 101 practicing dentists in the state of Georgia concerning dentistry for mentally retarded children. The sample of dentists was selected on the basis of number of years in practice and size of community. The selected dentists were interviewed to determine their present practices concerning the management of mentally retarded children and the role played by such variables as: training in providing treatment for these children, office facilities, and finances. Their opinions concerning possible solutions to these problems were also noted.

Butts[39] found that the dentists who had been in practice less than 15 years treated more retarded children than those who had practiced over 15 years. He also found that dentists in smaller communities treated many more children than those in the largest metropolitan area. This group of dentists seemed to agree that lack of special training and proper facilities easily could be identified as strong barriers to treatment. A large number of dentists reported that they were unable to provide treatment and did not know another dentist to whom they could refer patients. One of the solutions suggested by these responding dentists was to incorporate more training in the care of special children into the curricula of undergraduate dental schools.

Chiono and Miyamoto[40] reported on a survey of the Southern California Unit of the American Society of Dentistry for Children on the care of the handicapped. A total of 419 questionnaires were mailed and 301 were returned by; 147 pedodontists, 101 general dentists, 52 orthodontists and one oral surgeon. Of the 71.8 percent of the members who returned the questionnaire, 44 percent provided regular care for the handicapped. Of the pedodontists, 61 percent were providing regular care for the handicapped, but only 27 percent of the general practitioners and orthodontists were regularly treating these special patients. The authors also found that 66 percent of the responding dentists desired a one-day postgraduate course on the treatment of handicapped patients. Almost all the pedodontists indicated a desire for such a course.

Questionnaires were mailed to 1,142 practicing dentists throughout the United States by Mathewson and Beaver[41] in 1970 in order to determine the sources of management of dental problems of handicapped patients. The survey was sent to members of the American Academy of Pedodontics who were engaged in private practice and a similar number of practicing general dentists. The sample was randomly selected from 46 states. The authors found that 75.5 percent of the pedodontists and only 30 percent of the general practitioners returned the questionnaire. Of the dentists who responded, 91.8 percent of the pedodontists and 28.5 percent of the general practitioners stated that they were treating patients with cerebral palsy. The authors also reported that the pedodontists treat a greater percentage of handicapped patients

over 21 years of age. Many of these pedodontists stated that there was no general practitioner in his area who was willing to incorporate such patients into his practice. Mathewson and Beaver also found that most of the general practitioners had little or no education concerning the treatment of handicapped patients, either in undergraduate or postgraduate courses. Both the pedodontists and general practitioners were interested in obtaining additional training for the care of handicapped patients.

The results of a study by Latimer[42] were much more favorable concerning the availability of dental care for mentally retarded persons. Based on the responses from 148 dentists interviewed and 104 answering questionnaires in Ohio, Kentucky, and Indiana, she reported that 89 percent of those interviewed and 68 percent of those dentists who returned the questionnaire said they could treat mentally retarded patients. Latimer also found that 1840 mentally retarded persons were treated annually by this group. It was noted that with regard to continuing education, 87 percent of the interviewed dentists and 67 percent of those surveyed by mail expressed an interest in courses on dentistry for special patients.

Snyder, Knopp, and Jordan,[2] as part of their study of dental needs of handicapped persons, interviewed 44 dentists to determine their attitudes toward and experiences with retarded children. The authors indicated that many older dentists felt this was a responsibility of the younger practitioners. They also found that referrals had not been made to any extent.

Stocker[43] said that unfortunately the dentist's reaction to working on a handicapped child is usually associated with overcoming the physical stigmata.

Very little information is available concerning how the dentist feels about patients who are handicapped and how he copes with these feelings. It does seem that dentists, like all other individuals, are influenced by preconceived ideas about cerebral palsied persons. Most of these feelings are acquired as a result of lack of exposure to this type of person. As often stated in previous studies concerning dentists' attitudes, education and exposure are major factors in overcoming preconceived ideas. The amount of education available and the effects of this education in altering attitudes have also been examined. Hale[44] stated that the dental profession in the past has not adequately cared for the needs of the handicapped patient. He indicated that the trend of the future in this area depends on an intensified educational program at the undergraduate level. He wrote: "Our dental students should graduate with the knowledge of and ability to provide treatment for all handicapped patients without fear of injury to the patient or danger to themsleves."

Stiff and Phipps[45] studied the effect that education exerted in changing the attitudes of students toward persons who were disabled or chronically ill. A questionnaire was used to test change in attitude of senior dental students following practical experience with disabled patients. The results strongly suggested that the dental curriculum should be changed so that the students' attitudes in this respect would

be improved. The authors felt that fear, lack of understanding and a sense of incompetency seem to be the main reasons why the handicapped patient is not receiving adequate dental care.

The effectiveness of undergraduate dental school education was also evaluated by Moosbruker and Giddon.[46] They compared the attitudes of 94 senior dental students at Tufts University Dental School, who had been exposed to the treatment of handicapped patients, to the attitudes of 91 seniors at the University of Maryland who had had no such exposure. The attitudes were measured using the Attitude Toward Disabled Persons Scale[47] plus a supplemental questionnaire. This survey indicated that more of the senior dental students from Tufts felt they should provide dental care to persons with cerebral palsy and they also felt more competent to provide such treatment.

These investigations seem to indicate that education and experience are beneficial in providing positive feelings toward persons with handicapping conditions and confidence in treating such persons.

The availability of undergraduate and postgraduate education concerning the treatment of handicapped patients was examined by McConnell[48] in 1967. He surveyed 54 dental schools in the United States and found that only 38 of these schools offered even a minimal exposure of their students to dental care for the handicapped. Only 12 schools offered any continuing education courses related to this field of study. McConnell[48] concluded that over 4,000 dental school graduates per year are receiving totally inadequate training in the area of treatment of handicapped persons.

Castaldi[49] used a questionnaire to survey 200 Indiana dentists concerning their preparation in dental school to care for the handicapped child. The condition of cerebral palsy was included in this study. Seventy-five percent of the responding dentists indicated they had seen an average of 1.5 adults and 1.5 children per dentist since their graduation from dental school. Over 66 percent indicated that they received no training in this area in dental school. Almost all of the responding dentists felt that curriculum changes were desirable. They preferred additional clinical training to additional lectures in this area of dentistry for the special patient.

Miller[9] stated, "Dental educators must be urged to take a long hard look at the curriculum in their schools. The training of undergraduates deserves the inclusion of some of the special problems of the chronically ill and the needs of the mentally retarded must not be overlooked."

The availability of continuing education courses for the practicing dentist was recently examined. According to the course listing by American Dental Association,[50] a total of 764 continuing education courses were planned in educational institutions for January through June, 1977. Only six of this number concern dentistry for the handicapped. Of the 281 courses sponsored by non-educational institutions, only two were related to dental therapy for such patients.

Although most authors[39-42] have reported a strong interest in continuing education concerning the treatment of handicapped patients, Cafferata and co-workers[51] reported different results. This team of

investigators mailed questionnaires to 600 dentists in New York concerning their attitudes and interest in continuing education courses. In this 1974 study the responding dentists showed the least interest in courses concerning hospital dentistry and special problems of the difficult child. No reason was given for this lack of interest or for the discrepancy from findings of other authors.

Kobren[52] sums up the area of dental education well in stating:

> The need is great, and it is deplorable that so many graduates and colleagues need wait for postgraduate courses and clinical training or hospital internship to acquaint themselves with the dental problems of so vast a segment of our population as that comprising the handicapped child. Even at best, these postgraduate considerations are pitifully few and the number of dentists interested even less, for most they are offered when the individual dental philosophies have already been formulated and are well under way in private practice. If we are to motivate and make each year's accession of dental students to dental practice aware of this neglected group, then certainly we must have a beginning, a moulding and a visualization that must be initiated in the early years of dental study. If we look to the private practitioner, whose training for the most part in this service is minimal, how can we expect to render effective treatment on handicapped children. The answer lies, therefore, in the cradle of dental knowledge and training, the dental school. There is logic in having this important segment of the handicapped as a part of the total picture of dentistry for children, for therein we have the advantage of didactic direction and clinical treatment not by the few but by the many.

Questionnaire

The mailed questionnaire is a list of questions for information or opinion which is mailed to potential respondents who have been chosen in some designated manner. The respondents are asked to complete the questionnaire and return it by mail.[53] In this period of many demands

on a limited amount of time, the mailed questionnaire has some major weaknesses as well as advantages. The disadvantages will be examined first. Kerlinger[54] stated that two serious drawbacks of the mailed questionnaire are the lack of response and the inability to check the answers given. He said that if mailed questionnaires are used every effort must be made to obtain at least a 80 percent return in order to survey the entire cross section. He pointed out that the characteristics or attitudes being tested may be different in the segment that does not respond. Parten[55] also stated that valid generalizations cannot be made if returns are low in mail questionnaires.

Wallace[56] warned that most ordinary studies, as conducted by private and unskilled persons, yield only from 10 to 25 percent of returns. He agreed with Kerlinger[54] that "those who answer questionnaires may differ from non-respondents there-by biasing the sample". Other weaknesses include: the fact that validity depends on the ability and willingness of the respondent to provide information, also questions may be misinterpreted, and there is no way to identify any reluctance or evasiveness on the part of the respondent.

Miller,[53] on the other hand, presented some of the following advantages of mailed questionnaires:

1. They afford wider geographic contact.
2. Greater coverage may yield greater validity through larger and more representative samples.
3. They permit more considered answers.
4. They are adequate in situations in which the respondent must check his information.

5. They provide for greater uniformity in the manner in which questions are posed.
6. They give the respondent a sense of privacy.
7. They lessen adverse interviewer effect.

The validity of a questionnaire is complex and very difficult to determine. The most common definition of validity is epitomized by the question: Are we measuring what we think we are measuring? To better understand this concept a more thorough examination is necessary. Validity is classified into four types according to a joint committee of the American Psychological Association, the American Educational Research Association, and the National Council on Measurements Used in Education.[57] These four types are predictive, concurrent, content, and construct validity.

Content validity refers to the representativeness or sampling adequacy of the content. Content validity consists essentially in judgment. Alone or with others, one judges the representativeness of the items. The more competent the judges evaluating the items, the better the content validity, according to Kerlinger.[54]

Predictive and concurrent validity are associated with practical problems and outcomes. This type of validity is examined by comparing the results of a measuring instrument to the actual outcomes: for example, how well the instrument predicts behavior.

Construct validity goes beyond how well the instrument predicts an outcome. This type of validity involves the explanation of individual differences in test results. An attempt is made to determine why the test is successful in predicting outcome.

The problem of constructing the questionnaire to truly evaluate attitudes is a difficult one. Miller[53] outlined a guide for questionnaire construction to aid in the validity of the instrument. He recommended the following:

1. Have a clear picture of what you are seeking to find.
2. Formulate questions

Use familiar language and terminology.

Pick words that have the same meaning to everyone.

Avoid long questions.

Do not assume that your respondent possesses factual information or first hand opinions.

Establish the frame of reference you have in mind.

Either suggest all possible alternatives to a question or don't suggest any.

Protect your respondent's ego.

If you're after unpleasant orientations, give your respondent a chance to express his positive feelings first so he is not put in an unfavorable light.

Decide whether you need a direct or an indirect question.

Decide whether the question should be open or closed.

Decide whether general or specific questions are needed.

Avoid ambiguous wording.

Avoid biased or leading questions.

Phrase questions so they are not unnecessarily objectionable.

Decide whether a personal or impersonal question will obtain better results.

Questions should be limited to a single idea or reference.

3. Organize the questionnaire with the previous points in mind.
4. Pretest the questionnaire.
5. Select paper and type carefully.
6. Consider how you can present the strongest possible sponsorship. The group that will support your efforts through a covering letter is important.
7. Examine each of the techniques for increasing return of the questionnaire and decide which will maximize returns for you.

Several persons have advocated various techniques to improve the percent of returns in the mailed survey. Norton[58] found that the sponsor of the questionnaire was important and could increase the returns by 17 percent. Responses by colleagues in a similar field were usually very good. The length of the questionnaire is critical, as indicated by Miller,[59] who quotes a study by Sewell and Shaw. The shorter the questionnaire, the better the percent returned. Miller[60] also quoted Sletto, who found that an altruistic appeal increased returns by 67 percent. According to Miller,[53] the percent of returns is approximately doubled if stamps are used on the return envelopes instead of metered postage. It has also been noted that professionals are more likely to return questionnaires than non-professionals.

METHODS AND MATERIALS

A survey was conducted to measure the attitudes of dentists in Indiana toward the treatment of patients with cerebral palsy. A total Of 506 dentists were selected to represent the practicing dentists in Indiana and a questionnaire was mailed to each of these representatives.

STUDY SAMPLE

The sample of dentists was selected according to the following criteria. Four hundred and two of the sample were general practitioners and 104 were in specialty practice. Those in general practice were selected according to the size of the community in which they practiced and also the number of years since their graduation from dental school. Census figures from 1970[61] were used to place Indiana cities in four categories according to population: Under 2,500; 2,500-25,000; 25,000-100,000; and above 100,000. An effort was made to maintain an equal distribution of representative dentists over the entire state. This was accomplished by using the 14 component dental society districts established by the Indiana Dental Association[62] and, where possible, by selecting an equal number of cities from each district. Approximately 100 dentists were selected from each of the four city groups; therefore, insofar as possible, a total of seven representatives were selected from each district in each population category for a total of approximately 28 per component district. However, since many districts contained no cities in the larger two population groups, the

dentists were distributed evenly among the total number of large cities that were available. Also, an attempt was made to select dentists from as many cities as possible in each population group. Since only five districts contained cities larger than 100,000, 20 dentists had to be selected from each of these five available cities. Since eight districts had no cities in the 25,000-100,000 category, 13 dentists were selected from each of these districts. If the district contained more than one city this size, the 13 representatives were divided among all cities of that size within that district. In the smaller two population groups, each of the 14 districts contained cities of the proper size and therefore seven representative dentists were chosen from as many different cities as were available in each group.

After the cities had been placed in categories, the representative general practitioners from each city were selected according to their year of graduation from dental school. To assure an equal distribution of graduation dates, seven five-year groups were formed from 1940 to 1974. Each district population category contained an equal number of representatives from each graduation group. Information from the American Dental Association Directory[62] was used to provide the date of graduation and office address. Included among the 104 specialists in the survey were representatives of six of the eight recognized specialties: pedodontics, periodontics, endodontics, orthodontics, prosthodontics, and oral surgery. Oral pathologists and public health dentists were eliminated from this study. Only dentists currently in

private practice were selected. The American Dental Association Directory[63] was used to determine the announced specialty. Questionnaires were sent to 7 prosthodontists, 10 endodontists, 19 periodontists, 26 pedodontists, 26 orthodontists, and 26 oral surgeons. The discrepancy in group size was a result of availability within each specialty. No attempt was made to place the specialists in groups according to date of dental school graduation or size of town in which they practice. They were equally distributed by component society district where possible.

QUESTIONNAIRE

Since no standardized evaluating instrument was available, a questionnaire had to be specially designed. In an effort to maximize the response, the instrument was only two pages in length and required only check mark type responses (Appendix 1). The first few items verified specialty practice, date of dental school graduation and community size. The remaining items were designed to measure attitude toward patients with cerebral palsy and attitudes toward adequacy of dental school training in this area. The dentists were given an opportunity to express any interest in obtaining additional education in dealing with cerebral palsied persons. The items concerning possible problems in treating this type of patient (question 6) were developed from problems formerly reported by dentists or investigators. The questions regarding previous education (questions 6e and 7) were designed to test the fourth hypothesis concerning attitude toward previous education and willingness to learn more on the subject. Both of these items had a graded response utilizing the Likert scale.[64]

A one-page cover letter (Appendix 2) which accompanied each questionnaire explained the purpose of the investigation and the benefits of this research to persons with cerebral palsy. To encourage a maximum response from the dentists being surveyed, the cover letters were individually typed with the dentist's name being used in the salutation, and were personally signed by the investigator. The cover letter, the two-page questionnaire, and a stamped self-addressed envelope were mailed to the selected dentists on September 7, 1976.

A pilot study was conducted. It consisted of 20 representative dentists selected according to the above criteria. This preliminary survey was used to determine if the questions could be interpreted clearly by the respondents. After analyzing the responses from this preliminary investigation and clarifying a few of the questions, the revised questionnaires were mailed to 486 selected dentists.

Various groups in the entire study were compared for statistical significance using Chi square and t-test analysis.[65]

RESULTS

Of the 506 questionnaires mailed to dentists throughout the state of Indiana, 407 (80 percent) were returned. The respondents included 97 percent of the specialists and 75 percent of the general practitioners. A total of 383 questionnaires were returned in usable form, giving year of graduation and specialty area. Several of the respondents did not answer all of the questions, creating some inconsistency in the total number of responses to each question. The usable data were tabulated and analyzed using Chi-Square and t-test comparisons of selected groups. An attempt was made to determine whether practicing dentists were treating patients with cerebral palsy. The study also tried to determine the reason for any reluctance that dentists might have about treating these patients.

The questions and the responses by the participating dentists are presented in Tables I, II, and III.

As Table I shows, there was no significant difference in attitude toward patients with cerebral palsy between dentists in general practice who are located in communities of various sizes.

Table II divides the general practitioners into groups according to their year of graduation from dental school. Similarly, the attitudes toward cerebral palsied patients between these groups did not differ significantly.

Table III represents the responses by the specialists returning the questionnaire. Several t-test and Chi Square comparisons were made

between responses from general practitioners and those of various specialty groups (Tables IV-VIII).

A t-test showed that general practitioners felt more strongly than specialists that special equipment is necessary to treat cerebral palsied patients. The difference in this feeling between general practitioners and specialists was significant at the .001 level (Table IV).

Similarly, there was significantly less (.01 level) feeling among specialists than general practitioners that time is a factor in deciding whether to treat cerebral palsied patients (Table V).

Table VI indicates that general practitioners felt significantly more apprehensive (.001 level) about treating patients with cerebral palsy than specialists.

As illustrated in Table VII and VIII, pedodontists were more willing to treat the more severely affected persons with cerebral palsy. The statistical significance was beyond the .001 level in both comparisons. Pedodontists and oral surgeons were significantly less apprehensive (.001 level) than the other specialist groups about treating patients with cerebral palsy (Table IX).

Sixty-six percent of the responding general practitioners indicated that they felt their dental school education concerning the treatment of special patients was inadequate. Most of them stated that they would like additional information in this area of dental care. Seventy percent of the general practitioners and 57 percent of the specialists indicated an interest in obtaining additional information in this area through presentations at their component dental society meetings.

Sixty-three percent of the general practitioners and 59 percent of the specialists were willing to receive additional information through the mail. Seventy-two percent of the general practitioners and 73 percent of the specialists indicated that the professional journals would be a good method of learning more in this area of treatment of special patients. Interestingly, smaller numbers--31 percent of the general practitioners and 42 percent of the specialists--favored continuing education courses.

TABLES

TABLE I

The results of a survey of general practitioners indicating year of dental school graduation, number of patients with cerebral palsy seen, severity preference, possible problems restricting treatment and additional educational needs divided according to community size.

Community Size	0-2,500		2,500-25,000		25,000-100,000		over 100,000		Total	Percent
Seen Patients Previous Year	no	yes	no	yes	no	yes	no	yes	282	100
In what year did you graduate from dental school?										
71-74	4	4	10	7	7	5	11	3	51	18
65-70	5	9	8	9	4	9	8	4	56	20
55-64	9	4	7	19	11	15	14	8	87	31
40-54	8	6	15	14	13	12	10	11	88	31
Approximately how many cerebral palsied patients did you treat in 1975?										
0	26	0	39	0	34	0	48	0	147	52
1-2	0	13	0	24	0	30	0	12	79	28
3-5	0	7	0	15	0	10	0	9	41	15
6-10	0	2	0	3	0	1	0	2	8	2
greater than 10	0	1	0	3	0	2	0	1	7	2
What is your position concerning the treatment of cerebral palsied patients?										
none	5	2	10	3	9	6	10	2	47	17
mild	6	8	19	17	17	18	20	11	116	41
adults	1	0	0	1	1	4	1	2	10	4
all	13	15	9	29	6	16	10	10	108	38

TABLE I (continued)

Community Size	0-2,500		2,500-25,000		25,000-100,000		over 100,000		Total	Percent
Seen Patients Previous Year	no	yes	no	yes	no	yes	no	yes	282	100
Please indicate the response that most closely states your feelings concerning the following statements.										
Cerebral palsied patients take too much time away from my practice.										
Strongly agree	1	0	1	0	1	0	2	0	5	2
Agree	1	1	9	9	3	6	4	1	34	12
Undecided	8	2	11	6	13	8	20	5	73	27
Disagree	10	18	12	23	12	21	14	17	127	46
Strongly disagree	4	2	4	9	2	7	5	2	35	13
My office is not physically equipped to handle cerebral palsied patients.										
Strongly agree	2	1	4	1	5	4	5	1	23	8
Agree	7	8	13	11	8	13	17	7	84	31
Undecided	7	3	14	5	11	10	14	2	66	23
Disagree	9	12	6	26	6	12	7	11	89	32
Strongly disagree	1	1	2	4	2	3	3	4	20	7
Cerebral palsied patients have a significantly disturbing affect upon other patients.										
Strongly agree	0	0	2	1	0	0	2	1	6	2
Agree	5	2	5	4	5	7	5	3	36	13
Undecided	6	4	10	6	11	5	14	2	58	21
Disagree	13	15	17	31	15	16	21	15	143	52
Strongly disagree	2	3	4	5	1	14	5	3	38	14

TABLE I (continued)

Community Size	0-2,500		2,500-25,000		25,000-100,000		over 100,000		Total	Percent
Seen Patients Previous Year	no	yes	no	yes	no	yes	no	yes	282	100
I feel some degree of repulsion by this type of patient.										
Strongly agree	0	0	0	0	0	0	0	0	0	0
Agree	6	0	4	2	4	2	5	4	27	9
Undecided	1	1	6	2	5	1	5	0	21	8
Disagree	14	14	20	23	14	21	21	12	139	51
Strongly disagree	5	9	9	20	9	18	16	9	95	35
I feel apprehension in dealing with this type of patient.										
Strongly agree	0	0	2	0	0	0	5	0	7	2
Agree	13	8	20	13	18	19	17	7	116	42
Undecided	5	1	7	5	7	4	6	3	39	14
Disagree	6	12	8	21	6	15	14	11	94	34
Strongly disagree	1	4	2	7	1	3	6	5	29	11
I feel the amount of training I received in dental school concerning the treatment of handicapped patients was adequate.										
Strongly agree	0	2	2	2	2	0	2	1	11	4
Agree	7	1	9	6	4	10	7	3	47	17
Undecided	3	5	4	7	2	7	5	4	37	13
Disagree	13	11	16	27	19	17	19	10	132	48
Strongly disagree	3	5	8	5	6	7	14	7	55	20

TABLE I (continued)

Community Size	0-2,500		2,500-25,000		25,000-100,000		over 100,000		Total	Percent
Seen Patients Previous Year	no	yes	no	yes	no	yes	no	yes	282	100
Would you be interested in obtaining additional knowledge about treating cerebral palsied patients by any of the following means?										
Continuing education courses through the dental school or medical center.										
Yes	12	11	7	12	13	15	4	14	88	31
No	17	9	16	12	19	26	31	15	145	52
No response	4	0	1	6	10	5	12	11	49	17
Presentations at a component society dental meeting.										
Yes	28	16	18	25	28	30	22	27	194	70
No	5	3	3	3	9	9	16	8	56	20
No response	1	0	1	2	5	7	9	5	30	10
Additional information by mail.										
Yes	25	16	15	23	23	34	17	24	177	63
No	5	2	7	2	7	8	21	8	60	21
No response	3	2	2	5	12	4	9	8	45	16
Articles published in a dental journal.										
Yes	29	17	16	23	26	37	26	27	201	72
No	3	2	7	2	7	4	15	6	46	16
No response	1	1	1	5	9	5	6	7	35	12

TABLE II

The results of a survey of general practitioners indicating number of patients with cerebral palsy seen, severity preference, possible problems restricting treatment and educational needs divided according to year of graduation.

Year of Graduation	71-74		65-70		55-64		40-54		Total	Percent
Seen Patients Previous Year	no	yes	no	yes	no	yes	no	yes	282	100
Approximately how many cerebral palsied patients did you treat in 1975?										
0	32	0	25	0	42	0	47	0	146	52
1-2	0	13	0	16	0	30	0	22	81	29
3-5	0	6	0	11	0	10	0	12	39	14
6-10	0	0	0	1	0	4	0	3	8	3
greater than 10	0	1	0	2	0	2	0	3	8	3
What is your position concerning the treatment of cerebral palsied patients?										
none	4	1	6	1	7	6	16	4	45	16
mild	17	6	10	11	17	20	19	14	114	41
adults	0	1	0	2	1	0	1	1	6	2
all	12	12	8	16	15	20	8	20	111	40
Please indicate the response that most closely states your feelings concerning the following statements.										
Cerebral palsied patients take too much time away from my practice.										
Strongly agree	0	0	1	0	6	4	2	0	22	8
Agree	0	1	3	3	2	7	13	4	33	12
Undecided	12	4	9	4	17	7	15	6	74	27
Disagree	14	15	8	18	10	22	13	24	124	46
Strongly disagree	4	0	4	5	6	10	3	5	37	14

TABLE II (continued)

Year of Graduation	71-74		65-70		55-64		40-54		Total	Percent
Seen Patients Previous Year	no	yes	no	yes	no	yes	no	yes	282	100
My office is not physically equipped to handle cerebral palsied patients.										
Strongly agree	0	0	1	0	6	4	8	3	22	8
Agree	10	3	5	9	9	11	21	13	81	30
Undecided	13	5	7	6	13	7	11	3	65	23
Disagree	6	10	9	13	9	20	7	16	90	33
Strongly disagree	3	2	1	2	3	4	0	5	20	7
Cerebral palsied patients have a significantly disturbing affect upon other patients.										
Strongly agree	1	1	0	0	1	1	1	0	5	2
Agree	6	4	3	1	3	7	10	3	37	14
Undecided	7	3	7	2	17	7	12	4	59	22
Disagree	16	12	13	19	15	20	21	26	142	51
Strongly disagree	2	0	2	8	4	11	2	6	35	13
I feel some degree of repulsion by this type of patient.										
Strongly agree	0	0	0	0	0	0	0	0	0	0
Agree	3	2	4	1	4	2	8	1	25	9
Undecided	4	0	1	0	7	2	7	2	23	8
Disagree	16	13	14	15	20	20	24	18	140	52
Strongly disagree	10	5	6	14	10	22	8	18	93	34

TABLE II (continued)

Year of Graduation	71-74		65-70		55-64		40-54		Total	Percent
Seen Patients Previous Year	no	yes	no	yes	no	yes	no	yes	282	100
I feel apprehension in dealing with this type of patient.										
Strongly agree	0	0	0	0	2	0	1	0	3	1
Agree	21	3	15	7	12	20	25	9	112	41
Undecided	2	2	3	2	12	3	8	7	39	14
Disagree	8	13	4	14	12	19	13	17	100	37
Strongly disagree	1	2	2	7	3	5	1	7	28	10
I feel the amount of training I received in dental school concerning the treatment of handicapped patients was adequate.										
Strongly agree	0	2	2	0	2	1	2	2	11	4
Agree	5	4	4	3	8	8	9	6	47	17
Undecided	0	1	2	5	9	5	6	8	36	13
Disagree	16	5	9	19	19	22	23	19	132	49
Strongly disagree	12	8	7	3	3	10	6	4	53	20
Would be interested in obtaining additional knowledge about treating cerebral palsied patients by any of the following means?										
Continuing education courses through the dental school or medical center.										
Yes	12	11	7	12	13	15	4	14	88	31
No	17	9	16	12	19	26	31	15	145	52
No response	4	0	1	6	10	5	12	11	49	17

TABLE II (continued)

Year of Graduation	71-74		65-70		55-64		40-54		Total	Percent
Seen Patients Previous Year	no	yes	no	yes	no	yes	no	yes	282	100
Presentations at a component society dental meeting.										
Yes	28	17	21	26	30	29	26	26	202	72
No	5	3	2	2	5	12	16	9	54	19
No response	0	0	1	2	5	7	5	5	25	9
Additional information by mail.										
Yes	25	16	15	23	23	34	17	24	177	63
No	5	2	7	2	7	8	21	8	60	21
No response	3	2	2	5	12	4	9	8	45	16
Articles published in a dental journal.										
Yes	29	17	16	23	26	37	26	27	201	71
No	3	2	7	2	6	4	15	6	45	16
No response	1	1	1	5	9	6	6	7	36	12

TABLE III

The results of a survey of specialists indicating number of cerebral palsied patients seen, severity preference, possible problems restricting treatment and additional educational needs divided by specialty.

Specialist	Endo-dontists		Ortho-dontists		Oral Surgery		Pedo-dontists		Perio-dontists		Prostho-dontists		Total	Percent
Seen Patients Previous Year	no	yes	no	yes	no	yes	no	yes	no	yes	no	yes	101	100
Approximately how many cerebral palsied patients did you treat in 1975?														
0	4	0	18	0	8	0	1	0	10	0	4	0	45	45
1-2	0	1	0	6	0	2	0	1	0	2	0	3	15	15
3-5	0	1	0	6	0	8	0	4	0	0	0	0	13	13
6-10	0	0	0	0	0	6	0	5	0	0	0	0	11	11
greater than 10	0	0	0	0	0	4	0	12	0	0	0	0	16	16
What is your position concerning the treatment of cerebral palsied patients?														
None	1	0	2	1	1	0	0	0	2	0	2	1	10	10
Mild	2	1	6	2	0	1	0	2	1	2	0	0	17	17
Adults	0	0	0	0	0	0	0	0	3	0	1	1	5	5
All	1	0	10	3	7	19	1	20	4	1	1	1	67	67
Please indicate the response that most closely states your feelings concerning the following statements.														
Cerebral palsied patients take too much time away from my practice.														
Strongly agree	0	0	0	1	0	0	0	0	0	0	1	1	3	3
Agree	1	0	2	0	0	3	0	0	0	0	0	0	6	6
Undecided	1	0	6	1	1	0	0	2	1	0	1	1	14	13
Disagree	1	1	8	1	5	9	0	10	6	2	0	1	44	42
Strongly dis.	0	0	2	3	1	7	1	10	2	1	1	0	38	36

TABLE III (continued)

Specialist	Endo-dontists		Ortho-dontists		Oral Surgery		Pedo-dontists		Perio-dontists		Prostho-dontists		Total	Percent
Seen Patients Previous Year	no	yes	no	yes	no	yes	no	yes	no	yes	no	yes	101	100
My office is not physically equipped to handle cerebral palsied patients.														
Strongly agree	0	0	1	0	0	0	0	1	2	0	2	1	7	7
Agree	2	0	3	0	0	3	0	2	3	0	1	0	14	14
Undecided	1	0	9	0	0	1	0	1	3	1	0	1	17	17
Disagree	0	1	4	5	6	9	1	6	3	1	0	1	37	38
Strongly dis.	0	0	1	1	0	6	0	12	0	1	1	0	22	23
Cerebral palsied patients have a significantly disturbing affect upon other patients.														
Strongly agree	0	0	0	0	0	1	0	1	1	0	0	1	4	4
Agree	1	0	1	1	1	6	0	3	1	0	1	1	16	17
Undecided	2	0	7	2	2	2	0	3	2	0	0	2	22	23
Disagree	0	0	10	2	4	7	1	8	4	3	1	0	40	42
Strongly dis.	0	1	0	2	0	3	0	7	1	0	0	0	14	15
I feel some degree of repulsion by this type of patient.														
Strongly agree	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Agree	0	0	3	0	0	0	0	0	0	0	1	0	4	4
Undecided	1	0	2	1	0	2	0	2	0	0	0	1	9	10
Disagree	2	0	7	3	6	9	0	9	6	3	1	3	48	51
Strongly dis.	0	1	7	1	0	8	1	11	3	0	1	0	33	35

TABLE III (continued)

Specialist	Endo-dontists		Ortho-dontists		Oral Surgery		Pedo-dontists		Perio-dontists		Prostho-dontists		Total	Percent
Seen Patients Previous Year	no	yes	no	yes	no	yes	no	yes	no	yes	no	yes	101	100
I feel apprehension in dealing with this type of patient.														
Strongly agree	0	0	1	0	0	0	0	0	0	0	0	0	1	1
Agree	1	0	5	1	0	2	0	1	3	0	1	0	14	15
Undecided	1	0	5	0	2	1	0	0	1	0	1	1	12	12
Disagree	1	1	5	5	5	9	1	11	4	2	0	2	46	48
Strongly dis.	0	0	3	0	0	7	0	10	1	1	1	0	23	24
I feel the amount of training I received in dental school concerning the treatment of handicapped patients was adequate.														
Strongly agree	0	0	0	0	0	1	0	3	0	0	0	0	4	4
Agree	0	0	2	3	2	6	0	5	2	0	0	0	20	21
Undecided	0	0	5	0	0	0	0	2	3	1	1	0	12	12
Disagree	0	1	6	2	4	7	0	8	2	2	0	2	34	35
Strongly dis.	3	0	6	1	1	5	1	4	2	0	2	1	26	27
Would you be interested in obtaining additional knowledge about treating cerebral palsied patients by any of the following means.														
Continuing education courses through the dental school or medical center.														
Yes	2	1	9	1	2	7	1	15	3	0	0	1	42	42
No	0	0	7	4	3	10	0	3	3	3	4	1	38	37
No response	2	0	3	1	3	3	0	4	5	0	0	1	21	20

TABLE III (continued)

Specialist	Endo-dontists		Ortho-dontists		Oral Surgery		Pedo-dontists		Perio-dontists		Prostho-dontists		Total	Percent
Seen Patients Previous Year	no	yes	no	yes	no	yes	no	yes	no	yes	no	yes	101	100
Presentations at a component society dental meeting.														
Yes	3	1	12	4	5	15	1	8	5	2	0	2	58	57
No	0	0	4	1	1	2	0	4	2	1	3	0	18	18
No response	1	0	3	1	2	3	0	9	4	0	1	1	25	25
Additional information by mail.														
Yes	3	0	10	3	6	16	1	12	5	2	0	2	60	59
No	0	1	8	2	0	1	0	1	2	1	3	0	19	19
No response	1	0	1	1	2	3	0	9	3	0	1	1	22	21
Articles published in a dental journal.														
Yes	2	1	16	4	6	17	1	14	7	3	0	2	73	73
No	0	0	3	1	0	1	0	1	0	0	2	0	8	8
No response	2	0	0	1	2	2	0	7	3	0	2	1	20	20

TABLE IV

The t-test comparison of specialists and general practitioners on equipment needs as a treatment limiter.

	SA	A	U	D	SD	Total	Mean	Std dev	t
General Practitioners	23	84	66	89	22	282	3.00	1.11	5.76***
Specialists	7	14	17	37	22	97	2.45	.68	

At 96 d.f. t .05 = 1.99
t .01 = 2.64
t .001 = 3.43

TABLE V

The t-test comparison of specialists and general practitioners concerning whether treatment of patients with cerebral palsy requires an excessive amount of time.

	SA	A	U	D	SD	Total	Mean	Std dev	t
General Practitioners	5	34	73	127	35	274	2.44	.925	
Specialists	3	6	14	44	38	105	1.97	1.64	2.78**

at 104 d.f. t .05 = 1.99
t .01 = 2.63
t .001 = 3.40

TABLE VI

The t-test comparison of specialists and general practitioners concerning whether they felt apprehensive about treating patients with cerebral palsy.

	SA	A	U	D	SD	Total	Mean	Std dev	t
General Practitioners	7	116	39	94	29	285	2.92	1.11	
Specialists	1	14	12	46	23	96	2.21	.997	5.82***

at 95 d.f. t .05 = 1.99
t .01 = 2.64
t .001 = 3.43

TABLE VII

The t-test comparison of pedodontists and general practitioners concerning the severity of cerebral palsied patients they prefer to treat.

	NONE	MILD	ALL	TOTAL	MEAN	STD DEV	t
General Practitioners	45	120	111	276	1.76	.713	
Specialists	0	2	21	23	1.09	.373	4.32***

At 22 d.f. t .05 = 2.07
t .01 = 2.81
t .001 = 3.77

TABLE VIII

The Chi Square comparison of pedodontists, oral surgeons and other specialists concerning numbers of patients seen.

Specialist	Pedodontists			Oral Surgeons			Others		
	O	E	X^2	O	E	X^2	O	E	X^2
0	1	(10.45)	8.55	8	(12.73)	1.76	36	(21.82)	9.21
1-5	5	(6.27)	.26	10	(7.64)	.73	12	(13.09)	.09
6 or more	17	(6.27)	18.26	10	(7.64)	.73	0	(13.09)	13.09
	23	23	27.17	28	28	3.22	48	48	22.39

$X^2 = 52.78$***

At 4 d.f. X^2 .05 = 9.48

X^2 .01 = 13.28

X^2 .001 = 18.46

TABLE IX

The t-test comparison of pedodontists and oral surgeons with the other specialists concerning whether they felt apprehensive about treating patients with cerebral palsy.

	SA	A	U	D	SD	Total	Mean	Std dev	t
General Practitioners	0	3	3	26	17	49	1.84	1.28	
Specialists	1	11	9	20	6	47	2.60	1.05	3.39**

At 90 d.f. t .05 = 1.99
t .01 = 2.64
t .001 = 3.42

DISCUSSION

The response to this mailed survey was gratifying. Of the 486 (not including the pilot study) questionnaires which were sent to Indiana dentists, 80 percent were returned, including 97 percent returned by the specialists group. This response compares favorably to the 71.8 percent returns reported by Chiono and Miyamoto[40] and the 30 percent of general practitioners and 75.5 percent of pedodontists reported by Mathewson and Beaver.[41] This high response could be attributed to a number of factors.

1. The dentists in Indiana were interested in helping these handicapped patients.

2. The sponsor of the questionnaire was a fellow professional completing work for a master's degree.

3. Each cover letter was individually typed and personalized with each dentist's name.

4. Each letter was personally signed.

5. The return envelope and original envelope contained a postage stamp.

6. The questionnaire was brief and simple.

These factors have been reported by sociologists[53,58] to increase the response of the mailed questionnaire type survey.

The results of this survey of dentists in Indiana were somewhat different than those set forth in the original hypotheses. One hypothesis was that general practitioners in Indiana were reluctant to

treat patients with cerebral palsy. This was based on data reported by Chiono and Miyamoto[40] and Mathewson and Beaver,[41] who found that only about 28 percent of the general practitioners were providing regular care for handicapped patients. The results of the present study indicated that a larger number of general practitioners in Indiana were treating this group of patients. Forty-eight percent of the total group stated that they had seen one or more cerebral palsied patients in the previous year. Also, 84 percent of the general practitioners indicated that they were willing to treat patients with cerebral palsy. Fifty percent of this number said they prefer to treat only those patients who were mildly affected and 50 percent stated they would treat all patients with cerebral palsy. An interesting trend was seen in the data. Those dentists who indicated that they had not seen cerebral palsied patients in the previous year were more likely to indicate that they preferred not to treat this type of patient. This supports the idea that experience in working with this type of patient builds confidence and the willingness to treat special patients.

The reason for the increased willingness among general practitioners to treat special patients could be related to the joint efforts of the Indiana State Health Department and the Dental Clinic of the James Whitcomb Riley Hospital for Children, which have presented yearly continuing education courses on dental treatment for the special patient. The long-term goal set forth by this group was that no handicapped patient need drive more than 50 miles for treatment.

The difference between the 84 percent of general practitioners who indicated a willingness to treat patients with cerebral palsy and

the 48 percent who had treated patients in the previous year may be due to the fact that these patients are not seeking treatment in some offices. Comments such as "I have never been called upon to treat this type of patient" and "Never had the opportunity to treat this type of patient" were frequently seen. The possibility also exists that the dentists were not completely frank about their willingness to treat special patients. The results of this study seem to conflict with the statements made by many parents of cerebral palsied children concerning the difficulty in finding a dentist who would provide care for their child. It is necessary to emphasize that the information tabulated and analyzed in this study is strictly from the dentist's point of view. Before this conflict can be resolved, a detailed survey of the parents of cerebral palsied patients is needed.

The results of a study by Butts[39] indicated that dentists who had been in practice less than 15 years treated more special patients than those who had practiced over 15 years. That finding was not supported in this study. A trend was seen in the data indicating that the 1971-74 graduates were slightly more willing to treat patients with cerebral palsy than the average for the total group and that the 1940-54 graduates were slightly less willing to treat these patients than the average; however this difference was not statistically significant. It was also interesting that while the 1971-74 graduates were more willing to treat cerebral palsied patients than the average, they actually treated fewer cerebral palsied patients than the other graduate groups. This could be explained by the fact that although they are willing to

treat these patients, they may not yet have encountered many in their young practice. The responses to the question regarding possible problems affecting the treatment of cerebral palsied patients were similar in all graduate groups.

Butts[39] also stated that dentists in smaller communities treated many more special children than those in metropolitan areas. This statement again was not supported by the present research. The group of dentists from areas of over 100,000 population treated slightly fewer patients with cerebral palsy than the average for the total number; however, no statistically significant difference was found between the communities of different sizes. The responses to the question regarding possible problems affecting the treatment of cerebral palsied patients were similar in all community-size groups.

One of the hypotheses of the present study was that the specialists, and especially the pedodontists, were more willing to treat patients with cerebral palsy than the general practitioners were. This idea was supported by previous studies.[40,41] The responses from the specialists in the present study confirmed the hypothesis. Approximately 90 percent of the total group of specialists indicated a willingness to treat patients with cerebral palsy. Included in this group were 100 percent of the pedodontists and 97 percent of the oral surgeons. Most of the dentists in the pedodontist and oral surgeon group indicated a preference to treat all cerebral palsied patients, regardless of severity. Ninety-six percent of the pedodontists and 71 percent of the oral surgeons stated they had seen one or more patients in the

previous year. The majority of the pedodontists had seen six or more. The other specialists reported that they had seen slightly fewer patients with cerebral palsy than those reported by the general practitioners. Most of these specialists commented that they seldom had the opportunity to treat this type of patient. There were some differences in opinion between some specialists and the general practitioners on the question concerning problems in treating cerebral palsied patients. Almost all of the pedodontists were treating special patients and they therefore felt less apprehensive than the general practitioners; they did not feel so ill equipped to handle them, and they did not feel so strongly that cerebral palsied patients required an excessive amount of time.

The group of orthodontists commented that while they were willing to treat patients with cerebral palsy if indicated, in most cases the muscular imbalance prevented favorable longterm results.

The majority of all dentists surveyed indicated that their undergraduate dental education concerning treatment of special patients was not adequate. Many stated that they had received little or no exposure to this type of patient in dental school. Both groups responded very favorably to the possibility of obtaining additional knowledge in this area. They felt that presentations at component dental society meetings, publications in the dental journals and additional information through the mail were the best means of acquiring this knowledge. Over half of the responding general practitioners indicated that they were not interested in taking a continued education course in this

area of dental treatment. Comments such as "takes too much time" and "too expensive" were frequently seen. This finding agrees with those reported by Cafferata and co-workers,[51] who found little interest in continuing education courses concerning special patients.

Several recommendations may be proposed as a result of this investigation.

1. Similar studies should be carried out in other sections of the country.

2. To more fully understand the availability of dental care for this segment of the population, a survey of the parents of cerebral palsied children should be performed or a review of the available data comparing incidence of cerebral palsy with the number of patients being seen by a dentist.

3. The undergraduate dental school curriculum should be modified to include more clinical experiences for dental students in this area of treatment for special patients.

4. Additional presentations should be made to component dental society meetings.

SUMMARY AND CONCLUSIONS

This study investigated the attitudes of dentists in Indiana toward the treatment of patients with cerebral palsy. The attitudes were measured by using a mailed two-page questionnaire which was constructed by the investigator.

A sample of 506 dentists (including the pilot study) was selected: 402 general practitioners chosen on the basis of year of graduation, geographic location, size of community in which they practice; 104 specialists chosen on the basis of geographic location and type of specialty. All of the practicing specialties were represented: Pedodontics, endodontics, oral surgery, orthodontics, periodontics, and prosthodontics.

Eighty percent of the questionnaires mailed were completed and returned, including 75 percent of the general practitioners and 97 percent of the specialists.

The first hypothesis, that general practitioners in Indiana are reluctant to treat patients with cerebral palsy, was disproved. Forty-eight percent of the general practitioners had treated one or more cerebral palsied patients in the previous year and 84 percent indicated a willingness to treat this type of patient. Many general practitioners cited a lack of proper equipment and a feeling of apprehension as problems.

The second hypothesis, that the general practitioner in a community of less than 2,500 is more reluctant to treat persons with cerebral palsy than those in a larger city, was also disproved. No statistically significant difference was found based on community size.

The third hypothesis, that the general practitioner who has graduated from dental school within the last 10 years is less reluctant to treat these patients than earlier graduates, also was disproved. No statistically significant difference was found between these groups.

The fourth hypothesis, that the general practitioner feels that he did not receive adequate education concerning the treatment of cerebral palsied patients and is willing to acquire more knowledge, was verified. Sixty-six percent of the general practitioners indicated that their dental school education in this area was inadequate. Most desired additional knowledge concerning the treatment of special patients. They preferred presentations at component society meetings, additional information through the mail, and articles published in the professional journals to continuing education courses.

The fifth hypothesis, that the specialist is less reluctant to treat patients with cerebral palsy than is the general practitioner, was verified. Nearly 90 percent of the specialists indicated a willingness to treat patients with cerebral palsy. Although those who indicated that they saw one or more cerebral palsied patients included a smaller proportion of periodontists, prosthodontists, endodontists, and orthodontists, than general practitioners, 90 percent of the pedodontists and 71 percent of the oral surgeons said they had treated one or more cerebral palsied patients in the previous year.

Recommendations growing out of this study might include the following: similar studies in other regions, a survey of parents of cerebral palsied children, modifications in dental school curricula to include

more clinical experience on cerebral palsy, and additional presentations on the subject to dental society meetings.

APPENDIX

APPENDIX 1

QUESTIONNAIRE FOR DR. WICKLIFFE'S STUDY

Please Respond To At Least The Following Seven Questions.

1. What type of practice do you have?

___ General Practice

___ Practice limited to Endodontics

___ Practice limited to Orthodontics

___ Practice limited to Oral Surgery

___ Practice limited to Pedodontics

___ Practice limited to Periodontics

___ Practice limited to Prosthodontics

2. In what year did you graduate from dental school? _____

3. What is the size of the community in which your office is located?

___ Less than 2,500

___ 2,500-25,000

___ 25,000-100,000

___ Greater than 100,000

4. Approximately how many cerebral palsied patients did you treat in 1975? _____

5. What is your position concerning the treatment of cerebral palsied patients?

___ Prefer not to treat any patients with cerebral palsy

___ Prefer to treat only the mildly affected persons

___ Prefer to treat only adult cerebral palsied patients

___ Will treat all patients with cerebral palsy

6. Please indicate the response that most closely states your feelings concerning the following statements.

A. Cerebral palsied patients take too much time away from my practice.

Strongly agree__; Agree__; Undecided__; Disagree__; Strongly Disagree__

B. My office is not physically equipped to handle cerebral palsied patients.

Strongly agree__; Agree__; Undecided__; Disagree__; Strongly Disagree__

C. Cerebral palsied patients have a significantly disturbing affect upon other patients.

Strongly agree__; Agree__; Undecided__; Disagree__; Strongly Disagree__

D. I feel some degree of repulsion by this type of patient.

Strongly agree__; Agree__; Undecided__; Disagree__; Strongly Disagree__

E. I feel apprehension in dealing with this type of patient.

Strongly agree__; Agree__; Undecided__; Disagree__; Strongly Disagree__

F. I feel the amount of training I received in dental school concerning the treatment of handicapped patients was adequate.

Strongly agree__; Agree__; Undecided__; Disagree__; Strongly Disagree__

7. Would you be interested in obtaining additional knowledge about treating cerebral palsied patients by any of the following means?

Yes__ No__ Continuing education courses through the dental school or medical center.

Yes__ No__ Presentations at a component society dental meeting.

Yes__ No__ Additional information by mail.

Yes__ No__ Articles published in a dental journal.

8. If you have any questions or comments please state them here.

APPENDIX 2

INDIANA UNIVERSITY SCHOOL OF DENTISTRY
1121 WEST MICHIGAN STREET • INDIANAPOLIS, INDIANA 46202

DEPARTMENT OF PEDODONTICS
DIVISION OF GRADUATE PEDODONTICS

AREA CODE 317
TELEPHONE 264-7952

September 7, 1976

Dear Doctor Quinn:

I am a graduate of Indiana University School of Dentistry and currently a second year graduate pedodontic student. As a recipient of a fellowship from the United Cerebral Palsy Research and Educational Foundation, I have the opportunity to treat many patients with cerebral palsy. For my thesis research, I am obtaining the attitudes of practicing dentists in Indiana toward the care of patients with cerebral palsy.

You have been specifically selected as one of the dentists in my survey study to represent the dentists of Indiana. The purpose of this study is to identify the availability of oral health care for patients with cerebral palsy and to consider problems with respect to these patients.

The enclosed questionnaire is designed to be completed within ten minutes. Your response will remain completely anonymous and frank answers to the questions will be appreciated. I will be grateful for the prompt return of your completed form by September 20. An addressed and stamped envelope is enclosed for your convenience.

I anticipate publishing the results of this study in one of our dental journals. If you have any questions concerning this project please contact me. Thank you for your participation in this research to improve the oral health care for the patient with cerebral palsy.

Sincerely yours,

Tom Wickliffe

Thomas J. Wickliffe, D. D. S.
Graduate Pedodontic Student

TJW/ns
Enclosures

REFERENCES

1. Zappler, S.: Dentistry and the cerebral palsied child. J Dent Child, 16:16, 1949.

2. Snyder, J. R.; Knopp, J. J., and Jordan, W. A.: Dental problems of non-institutionalized mentally retarded children. North West Dent, 39:123, 1960.

3. Young, W. O. and Shannon, J. H.: Providing dental treatment for handicapped children. J Dent Child, 35:225-40, May 1968.

4. Gullikson, J. S.: Oral findings of mentally retarded children. J Dent Child, 36:59-64, March-April 1969.

5. Swallow, J. N.: Dental disease in cerebral palsied children. Develop Med Child Neurol, 10:180-89, 1968.

6. Fishman, S. R. and Young, W. O.: The status of oral health in cerebral palsied children and their siblings. J Dent Child, 34:219, 1967.

7. Horowitz, H. S.; Greek, W. J., and Hoag, O.S.: Study of the provision of dental care for handicapped children. J Am Dent Assoc 71:1397-1410, December 1965.

8. O'Leary, R. L.: Dental treatment for the cerebral palsied patient. N Y Dent J, 17:508, 1951.

9. Miller, S. L.: Dental care for mentally retarded; a challenge to the profession. Pub Health Dent, 25:111-15, Summer 1965.

10. McCracken, P. E.: The attitudes of parents of severely subnormal children to dental treatment. Proc Br Paedod Soc, 3:7-13, October 1973.

11. Kenny, D. J. and McKim, J. S.: Dental care demand for mongoloid and cerebral palsied children. J Can Dent Assoc, 37:270-4 May 1972.

12. Bramer, M. L.: Barriers in dental practice--architectural and structural. J Amer Coll Dent, 32:315-17, October 1965.

13. Little, W. J.: On the influence of abnormal parturition, difficult labor, premature birth, and asphyxia neonatrum on the mental and physical condition of the child especially in relation to deformities. Tr Obst Soc London, 3:293, 1862.

14. Perlstein, M. A.: Cerebral palsy: incidence, etiology, pathogenesis. Arch Pediat, 79:289, 1962.

15. Denhoff, E. and Robinault, I.: Cerebral palsy and related disorders. A developmental approach to dysfunction. New York, McGraw Hill, 1960.

16. Bax, M. C. O.: Terminology and classification of cerebral palsy. Dev Med Child Neuro, 6:295, 1964.

17. Kauffmann, J. H.: Psychological aspects of dentistry for children with cerebral palsy. J Dent Child, 23:69, 1956.

18. Bowley, A. H. and Garner, I.: The Handicapped Child: Education and Psychological Guidance for the Organically Handicapped. 3rd ed. Edinburgh, Churchill and Livingston, 1972.

19. Crothers, B. and Paine, R. S.: The Nature of Cerebral Palsy. Cambridge, Harvard University Press, 1959.

20. Monroe, D.: Dental Features. In Henderson, J. L.: Cerebral Palsy in Childhood and Adolescence. Baltimore, Williams and Wilkins, 1961, p 254.

21. Weiner, F.: Help for the Handicapped. 1st ed. New York, McGraw Hill, 1973.

22. Brown, J. P. and Schodel, D. R.: A review of controlled surveys of dental disease in handicapped persons. J Dent Child, 43:313-20, September 1976.

23. Album, M. M.; Krogman, W. M.; Baker, O., and Colwell, H. F.: An evaluation of the dental profile of neoromuscular deficit patients: a pilot study. J Dent Child, 31:204, 1964.

24. Magnusson, B. and DeVal, R.: Oral conditions in a group of children with cerebral palsy. Odontol Revy, 14:385, 1963.

25. Siegel, J. C.: Dental findings in cerebral palsy. J Dent Child, 27:233, 1960.

26. Shamarak, K. I. and Bernstein, J. E.: Caries incidence among cerebral palsied children. J Dent Child, 28:154-56, 1961.

27. Weisman, E. J.: Diagnosis and treatment of gingival and periodontal disorders in children with cerebral palsy. J Dent Child, 23:73, 1956.

28. Baer, P. N. and Benjamin, R. A.: Periodontal Disease in Children and Adolescents. Philadelphia-Toronto, J. B. Lippincott, 1974, pp 264-8.

29. Herman, S. C.: Enamel Hypoplasia in Cerebral Palsied Children. Master's Thesis, Indiana University School of Dentistry, 1961.

30. Via, W. F., Jr. and Churchill, J. A.: Cerebral damage dated by faults in dental enamel. I A D R Preprinted Abstracts No. 188, 1957.

31. Jackson, G. E.: A systemic analysis and classification of the dentofacial abnormalities shown in cerebral palsy. Am J Ortho, 42:310, 1956.

32. Lyons, D. C.: An evaluation of the effects of cerebral palsy on dentofacial development, especially occlusion of the teeth. J Pediatr, 49:432-36, 1956.

33. Magnusson, B: Oral conditions in a group of children with cerebral palsy. II, Orthodontic aspects. Odontol Revy, 15: 41-52, 1964.

34. Rosenbaum, C. H.; MacDonald, R. E.; and Levitt, E. E.: Occlusion of children with cerebral palsy. J Dent Res, 45:1696-1700, 1966.

35. Gum, S. W.: A roentgenographic cephalometric survey of the skeletal and dental pattern of the cerebral palsied. Am J Ortho, 48:66-7, January 1962.

36. Foster, T. D.; Griffiths, M. I., and Gordan, P. H.: Effects of cerebral palsy on the size and form of the skull. Am J Ortho, 66:40-9, July 1974.

37. Dummett, C. O.: A Comparison of Maxillary Arch Form Between Groups of Cerebral Palsied and Normal Children. Master's Thesis, Indiana University School of Dentistry, 1971.

38. Adelson, J.: The effects of dental treatment on behavior of handicapped patients. J Am Dent Assoc 30:1409-15, 1965.

39. Butts, J. E.: What do Georgia dentists think about dentistry for mentally retarded children? J Georgia Dent Assoc, 39:23-8, April, 1966.

40. Chiono, O. and Miyamoto, O.: The dental care of the handicapped: a survey of the Southern California Unit of A.S.D.C. J Dent Child, 36:217-8, May 1969.

41. Mathewson, R. J. and Beaver, H. A.: A survey of dental care for handicapped persons. J Pub Health Dent, 30:45, 1970.

42. Latimer, R.: Dental care for mentally retarded: a profession meets a challenge. Pub Health Dent, 29:127-9, Spring 1969.

43. Stocker, H. S.: Dentistry for God's forgotten children. J Dent Child, 30:161-7, 1963.

44. Hale, M. L.: The past and future of dentistry for handicapped persons. Pub Health Dent, 22:13-14, Spring 1962.

45. Stiff, R. H. and Phipps, G. T.: Attitudes of dental students toward chronically ill, aged and disabled persons. J Dent Educ, 28:149, 1964.

46. Moosbruker, J. B. and Giddon, D. B.: Effect of experience with chronically ill and handicapped patients on student attitudes. J Dent Educ, 30:278, 1966.

47. Yukor, H. E.; Block, J. R., and Campbell, W. J.: A scale to measure attitudes toward disabled persons. Human Resources Study, No. 5. New York: Human Resources Foundation, 1960.

48. McConnell, B. A.: A survey of undergraduate and graduate education exposure of treating handicapped children in dental schools. In Grew, J. M.: Proceedings of Curriculum Workshop on Undergraduate and Graduate Education concerning dental treatment for Handicapped Persons. Minneapolis, Minn., University of Minnesota School of Dentistry, October 1967.

49. Castaldi, C. R.: The preparation of the undergraduate student to render care for the handicapped child. J Dent Educ, 21:66-70, January 1957.

50. American Dental Association, Council on Dental Education. Courses sponsored by educational institutions. J Am Dent Assoc 93:1191-1226, December 1976.

51. Cafferata, G. L.; Goldberg, H. J.; Roghmann, K., and Fox, R.: Continuing education: Attitudes, interests, and experiences of practicing dentists. J Dent Educ, 39:793-800, December 1975.

52. Kobren, A.: Dental education and the handicapped child. Bulletin New York St Soc Dent Child, 14:10-11, May 1963.

53. Miller, D. C.: Handbook of Research Design and Measurements. 3rd ed. New York, McKay, 1976.

54. Kerlinger, F. N.: Foundations of Behavioral Research. New York, Holt, Rinehart, and Winston, 1964.

55. Parten, T.: In Berelson and Janowitz, Supplement to Reader in Public Opinion and Communication. New York: Free Press. 1953 p 397.

56. Wallace, D.: A case for and against mail questionnaires. Pub Opinion Quar, 18:40-52, 1954.

57. Technical Recommendations for Psychological Tests and Diagnostic Techniques, Psychological Bulletin, LI (1954), Supplement, pp 201-238.

58. Norton, J. K.: In Miller, D. C.: Handbook of Research Design and Measurements. 3rd ed. New York, McKay 1976, p 82.

59. Miller, D. C.: Handbook of Research Design and Measurements. 3rd ed. New York, McKay 1976, p 82.

60. Miller, D. C.: Handbook of Research Design and Measurements. 3rd ed. New York, McKay 1976, p 83.

61. United States Bureau of Census: Census of population and housing; general demographic trends for metro areas, 1960-70. Indiana Bureau of the Census, Washington, D. C. 1971.

62. Constitution and Bylaws of the Indiana Dental Association, Revised May 1973. J Ind Dent Assoc, 52:367-82, August-September 1973.

63. American Dental Directory, 1975. Chicago, American Dental Association, 1975.

64. Anastasi, Anne: Psychological Testing, 3rd ed. New York, The MacMillan Co., 1968, p 486.

65. Guilford, J. P.: Fundamental Statistics in Psychology and Education. 2nd ed. New York, McGraw Hill, 1950.

CURRICULUM VITAE

THOMAS J. WICKLIFFE

October 1, 1946	Born to Jewel and Mary Wickliffe in Fort Wayne, Indiana
1964-68	Indiana University A.B. Zoology
June 29, 1968	Married Sidney B. Wickliffe Fort Wayne, Indiana
1969-73	Indiana University School of Dentistry, D.D.S.
1973-75	Dental Officer, U.S. Indian Health Service, Fort Totten, North Dakota
July 1, 1975	Appointed United Cerebral Palsy Fellow
1975-77	Graduate student, Indiana University School of Dentistry Indianapolis, Indiana Pedodontics

Professional Societies

American Dental Association
American Academy of Pedodontics
American Society of Dentistry for Children

ABSTRACT

THE ATTITUDES OF DENTISTS IN INDIANA TOWARD THE TREATMENT OF PATIENTS WITH CEREBRAL PALSY

by

Thomas J. Wickliffe

Indiana University School of Dentistry

Indianapolis, Indiana

The attitudes of Indiana dentists toward the treatment of cerebral palsied patients were investigated. A two-page questionnaire constructed by the investigator was used.

A sample of 506 dentists were selected: 402 general practitioners chosen on the basis of year of graduation, location and community size; and 104 specialists chosen on the basis of geographic location and type of practice. All of the practicing specialties were represented.

Eighty percent of the questionnaires were returned, including 75 percent of general practitioners and 97 percent of specialists.

The first hypothesis, that general practitioners are reluctant to treat cerebral palsied patients, was disproved. Forty-eight percent of the general practitioners had treated one or more such patients in the past year and 84 percent indicated willingness to treat these patients. The general practitioners cited a lack of proper equipment and a feeling of apprehension as problems. The second hypothesis, that the general practitioner in a community of less than 2,500 is more reluctant to treat cerebral palsied patients than those in a larger city, was also

disproved. No statistically significant difference was found based on community size. The third hypothesis, that the general practitioner who has graduated from dental school within the last 10 years is less reluctant to treat these patients than earlier graduates, was also disproved. No statistically significant difference was found between these groups. The fourth hypothesis, that the general practitioner feels that he did not receive adequate education concerning treatment of these patients and is willing to acquire more knowledge, was verified. The fifth hypothesis, that the specialist is less reluctant to treat patients with cerebral palsy than is the general practitioner, was verified. Nearly 90 per cent of the specialists indicated a willingness to treat patients with cerebral palsy.